METHOD AND SYSTEM FOR CLIENT/SERVER AND PEER-TO-PEER DISK IMAGING

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to the systems and methods for copying or mirroring the binary data on one computer hard disk drive over a computer network to one or many other computer hard disk drives. More specifically, this invention provides a process or method for installing and/or distributing software from one computer system to one or more other computer systems over a computer network. Furthermore, this invention provides a system for solving the often tedious problems of installing computer software and distributing computer system files to a number of computer systems, providing a mechanism for fast software distribution on networked computers by eliminating the need to use the installation utilities of each application program to install the software package individually on each computer.

2. Description of Related Art

It is commonly known in the related art to transfer computer files from one computer hard disk to another computer hard disk. Similarly, it is well known to transfer files from computer to computer over a computer network. Likewise, computer network vendors have created tool sets, for use in their own labs, to transfer data from a master computer disk drive to an image file on a file server and then to download the data to the target or slave computers. Other existing tools will use the file server to broadcast data from an image file to the target or slave computers simultaneously (in parallel). Examples of these tools have been disclosed at conferences and with customers by Novell, Inc.

This invention has substantial and important advantages over prior known approaches. This invention not only can use a client/server model, it can also use a peer-to-peer model not available with computer network vendor tool sets or prior used disk-to-disk copying. Unlike, prior approaches, this invention can be used without a network file server and still can copy computer data from one computer hard disk to many computer hard disks over a computer network, by using the peer-to-peer mode of operation. Moreover, the peer-to-peer mode of operation provides important advantages in terms of transfer speed and lower cost. The speed advantage is realized by using a one step process rather than the two step process required for the client/server model of operation. In the invention's peer-to-peer mode, the data is distributed from the master computer to the slave computers in a single step. The cost advantage is achieved by not requiring a network file server to accomplish the one to many data imaging. Network file servers are costly to purchase, install and maintain.

For general background art the reader is directed to U.S. Pat. Nos. 4,866,664, 4,872,006, 5,249,290, 5,325,527, 5,396,613, 5,421,009, 5,438,671, 5,452,459, 5,459,837, 5,461,721, 5,465,351, 5,491,694, 5,495,611, 5,506,902, 5,513,126, 5,513,314, 5,515,508, 5,515,510, 5,517,645, 5,517,668, 5,522,041, 5,526,490, 5,528,757, 5,537,533, 5,537,585, 5,542,046 each of which is hereby incorporated by reference in its entirety for the material disclosed therein.

U.S. Pat. No. 4,866,664 discloses an interprocessor message communication synchronization apparatus and method for a plurality of processors connected to a system bus where one processor desiring to send a control signal to another processor, broadcasts an input/output write instruction on the system bus along with the address of the receiving processor and a data field representative of the control signal to be transmitted.

U.S. Pat. No. 4,872,006 discloses a data transmission system in which data are transmitted among plural stations.

U.S. Pat. No. 5,249,290 discloses a method of and apparatus for operating a client/server computer network to access shared server resources in response to service requests from client computers connected to the network.

U.S. Pat. No. 5,325,527 discloses a client/server communication system utilizing a self-generating nodal network wherein the method includes the steps of creating a server nodal network tree which includes the steps of generating a server root node which includes both process steps for communicating to an operating system and service nodes, and process steps for building service nodes which correspond to servers within the client/server system, each service node include both process steps for advertising a service to the server root node and process steps for building a topic node which includes both process steps for accessing a server and process steps for building a job node for storing a job request.

U.S. Pat. No. 5,396,613 discloses a method for error recovery in client/server distributed processing systems using cascaded servers.

U.S. Pat. No. 5,421,009 discloses a method for remote installation of software over a computer network, allowing the user to interactively select each remote computer system for software installation, or to provide a file containing a list of all remote computer systems.

U.S. Pat. No. 5,438,671 discloses a two-computer system and method where data is transferred between the computers as complete disk images rather than as files.

U.S. Pat. No. 5,452,459 discloses a method and apparatus for allocating server access in a distributed computing environment using a scheduling process.

U.S. Pat. No. 5,459,837 discloses a method and system for monitoring the performance of servers across a network and for suggesting an appropriate server to a client requesting a service, wherein a plurality of probes are placed in various clients in the network by a Broker-Performance Mechanism.

U.S. Pat. No. 5,461,721 discloses a system for transferring data between input/output devices and main or expanded storage under dynamic control of independent indirect address words.

U.S. Pat. No. 5,465,351 discloses a method and system for memory management of a client/server computing network.

U.S. Pat. No. 5,491,694 discloses an apparatus and method for establishing "virtual connections" through a packet switched data communications network, the network including a plurality of end systems and switches connected by links, to allocate a shared resource among competing devices.

U.S. Pat. No. 5,495,611 discloses a method and apparatus for dynamically loading an ABIOS device support layer in a computer system.

U.S. Pat. No. 5,506,902 discloses a data broadcasting system for the low-cost delivery of character-heavy data such as newspapers and magazines.

U.S. Pat. No. 5,513,126 discloses a method for a sender to automatically distribute information to a receiver on a network using devices and communication channels defined in the receiver profiles.